

Patent claims

1. A semiconductor component having a thin-film semiconductor body (2) arranged on a carrier (4),
5 characterized in that
the carrier (4) contains germanium.
2. The semiconductor component as claimed in claim 1,
characterized in that
10 the thin-film semiconductor body (2) is soldered onto
the carrier (4).
3. The semiconductor component as claimed in claim 1
or 2,
15 characterized in that
the thin-film semiconductor body (2) is soldered onto
the carrier (4) by means of a gold-containing solder.
4. The semiconductor component as claimed in one of
20 claims 1 to 3,
characterized in that
the thin-film semiconductor body (2) comprises a
plurality of individual layers.
- 25 5. The semiconductor component as claimed in one of
claims 1 to 4,
characterized in that
the thin-film semiconductor body (2) or at least one of
the individual layers contains a III-V compound
30 semiconductor.
6. The semiconductor component as claimed in claim 5,
characterized in that
the thin-film semiconductor body (2) or at least one of
35 the individual layers contains $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{P}$, $0 \leq x \leq 1$,
 $0 \leq y \leq 1$, $0 \leq x + y \leq 1$.
7. The semiconductor component as claimed in claim 5,

characterized in that
the thin-film semiconductor (2) or at least one of the
individual layers contains $\text{In}_x\text{As}_y\text{Ga}_{1-x-y}\text{P}$, $0 \leq x \leq 1$,
 $0 \leq y \leq 1$, $0 \leq x + y \leq 1$.

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8. The semiconductor component as claimed in claim 5,
characterized in that
the thin-film semiconductor body (2) or at least one of
the individual layers contains $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{As}$ where
10 $0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$ or $\text{In}_x\text{Ga}_{1-x}\text{As}_{1-y}\text{N}_y$
where $0 \leq x \leq 1$, $0 \leq y \leq 1$.

9. The semiconductor component as claimed in claim 5,
characterized in that
15 the thin-film semiconductor body (2) or at least one of
the individual layers contains a nitride compound
semiconductor, in particular $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{N}$, $0 \leq x \leq 1$,
 $0 \leq y \leq 1$, $0 \leq x + y \leq 1$.

20 10. The semiconductor component as claimed in one of
claims 1 to 9,
characterized in that
the thin-film semiconductor body (2) has a radiation-
emitting active region.

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11. The semiconductor component as claimed in one of
claims 1 to 10,
characterized in that
a mirror layer, preferably a metallic mirror layer, is
30 arranged between the thin-film semiconductor body (2)
and the carrier (4).

12. The semiconductor component as claimed in claim
11,
35 characterized in that
a dielectric layer is at least partially arranged
between the thin-film semiconductor body (2) and the
mirror layer.

13. A method for producing a semiconductor component having a thin-film conductor body (2) arranged on a carrier (4), having the steps of
- 5 a) growing the thin-film semiconductor body on a substrate,
- b) applying the carrier (4) to a side of the thin-film semiconductor body (2) that is remote from the substrate (1), and
- 10 c) stripping the thin-film semiconductor body (2) from the substrate,
- characterized in that the carrier (4) contains germanium.
- 15 14. The method as claimed in claim 13, characterized in that the substrate is eroded, in particular ground away and/or etched away, in step c).
- 20 15. The method as claimed in claim 13, characterized in that the semiconductor body is stripped from the substrate (1) by laser irradiation in step c).
- 25 16. The method as claimed in one of claims 13 to 15, characterized in that the carrier is soldered on in step b).
17. The method as claimed in one of claims 13 to 16,
- 30 characterized in that a gold layer (3, 3a, 3b) is arranged on that side of the thin-film semiconductor body (2) which faces the carrier and/or on that side of the carrier which faces the thin-film semiconductor body (2), which gold layer,
- 35 when the carrier is soldered on in step b), at least partially forms a melt containing gold and germanium.
18. The method as claimed in one of claims 13 to 17,

characterized in that
prior to step b), a layer containing gold and germanium
is applied on that side of the thin-film semiconductor
body (2) which faces the carrier and/or on that side of
5 the carrier which faces the thin-film semiconductor
body (2).

19. The method as claimed in one of claims 13 to 18,
characterized in that
10 a semiconductor component as claimed in one of claims 1
to 12 is produced by said method.

20. The semiconductor component as claimed in one of
claims 1 to 12 or the method as claimed in one of
15 claims 13 to 19,
characterized in that
the semiconductor component is a luminescence diode, in
particular a light emitting diode or a laser diode.